MARINE REVIEW.

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No Gas Buoys this Season—Their Peculiarities.

The lakes will get none of the five gas buoys promised for this season. Although no announcement to this effect has been made from Washington, it is understood that the appropriation of $30,000 made by the last congress for fifteen of the buoys is barely enough to meet the first cost of the buoys, $2,000 each, to say nothing of maintenance. The Pintsch buoy, manufactured by the Safety Car Heating and Lighting Company, of New York, is undoubtedly the buoy which the officers of the light-house board had in mind when congress was asked for an appropriation to secure fifteen of them, and the gas used in this buoy is of a peculiar kind, made only by the manufacturers of the buoy. It is a petroleum gas that can be greatly compressed and is suited to the purpose. While coal gas and othes gases used for lighting purposes would clog up burners and reservoirs after compression, and could not be stored in sufficient quantity to last more than about ten days, this Pintsch gas can be compressed in buoys to such an extent that a light will be sustained for ninety to 100 days, and the discharge is so regulated that the consumption is but about twelve cubic feet a day The trouble is found in supplying this kind of gas on the lakes. The gas must be taken either from Syracuse, N. Y., Marion, O., or Chicago, where Pintsch gas works are now located, and this would involve an extra expense not warranted by the appropriation.

This gas, which is so well adapted to the lighted buoy, is largely used for lighting and heating purposes on railway passenger trains, and it is on this account that the gas manufacturing plants are located at different points throughout the country.

Only Canadian Lights to Care for.

Capt. George P. McKay, of the Cleveland Vessel Owners' Association, spent Friday and Saturday of last week in Detroit and vicinity making inquiry regarding matters pertaining to lights for the coming season. Through appropriations secured at the last session of congress all lights in American territory maintained last year by private subscription are now provided for, excepting the small float light at Ballard's reef. This light, together with the range lights at Sarnia, would also be taken off the hands of the vessel owners were it not for the delay in securing the gas buoys which were expected from the government this season. Col. Ludlow is now engaged in putting the material aboard boat for the Windmill point ranges and they will be in readiness about May 1. The Gratioit lights will also be maintained by the government hereafter, arrangements having been made with Lynn, of Port Huron, for their care. It is with regard to to the Bar point light-ship, Duff & Gatfield's ranges and the float lights marking the west side of the Lime-Kilns cut that some anxiety is felt, however, as nothing has been done toward providing for these lights,and the keepers say they will not look after them unless they are paid last year's figures for their services. Some of the vessel owners say "let the boats tie up," but the recent accident to the City of Detroit would indicate that there will be many serious groundings immediately upon the opening of navigation unless these lights are provided for. If they are all to be paid for by the vessel owners it will require, in the absence of the gas buoys, about $6,500, as the list includes Bar point light-ship, Hackett's ranges at Malden, Duff & Gatfield's ranges, float lights on the east side of the Lime-Kilns cut, Ballard's reef light and the range lights at Sarnia. Mr. Carter, general manager of the Detroit & Cleveland Steam Navigation Company, has caused the light at Ballard's reef and Duff & Gatfield's ranges to be put in operation since the accident to the City of Detroit and is paying for the service. He will endeavor to get other vessel owners interested in having all the lights maintained again this season, but there will undoubtedly be a great deal of objection to it, on account of the poor outlook in freights.

Capt. McKay also called upon some of the Canadian officials and with the assistance of secretary Keep, of the Lake Carriers' Association, will endeavor to have the Dominion government take up these lights that have proved so costly to the vessel owners. He has promise of assistance from some of the members of the Canadian parliament as well as the Canadian vessel owners.

Lake-Built Government Boats.

Through the building of a few boats for light-house service the officers of the treasury department are becoming acquainted with the merits of lake shipbuilders. It was not expected in Washington that the three light-ships for the Straits could be built for $15,000 each, Col. William Ludlow's estimate, but they will be built for a little less than that figure, and they will undoubtedly be completed within the very short time allowed the builders, the Craig Ship Building Company, of Toledo, as Commander Clark, of Chicago, who has charge of the work, has all matters pertaining to them well under way. The low prices secured on these boats undoubtedy prompted the light-house board to ask lake builders for bids on the two coast tenders, Lilac and Columbine, but it is not probable that the work of constructing these boats will come to the lakes, as they can hardly be finished in time to get through the St. Lawrence before freezing weather sets in. A third tender, for which the board will open bids on May 5, is the Amaranth, to be used for light-house construction work in the Ninth and Eleventh districts. This boat will be finished about October and will take the place of the Warrington, which will be sold.

The Eleventh district tender, the Marigold, built by the Detroit Dry Dock Company, is a fitting specimen of lake shipyard work. She begins service this spring with everything aboard her new, and Commander Heyerman certainly has one of the best boats in the service. Every modern appliance is to be found aboard this boat and she is a very trim looking craft. Her triple expansion engines are models in every way and she makes twelve miles an hour against the river current without difficulty. Capt. Scott, who has been in the light-house service on the lakes for more than a quarter of a century, and who is well known as the author of Scott's Coast Pilot takes out the Marigold, and has been succeeded in the Warrington by Capt. Stoddard, a young Toledo officer.

A Marine Boiler.

In a supplement to this issue is presented a handsome engraving of one of the boilers recently placed in the Detroit Dry Dock Company's steel steamer No. 106, to be launched at Wyandotte soon. The boiler was built by the Dry Dock Engine Works and is 14 feet 2 inches diameter and 11 feet 6 inches long. It has four furnaces, 38 inches diameter, and 294 return tubes, 3¼ inches diameter. The Siemens-Martin steel used in its construction has a tensile strength of 60,000 pounds and the shell is 1.15 inches thick, allowing a working pressure of 162 pounds. The chimney is 7 feet 6 inches in diameter.

The Freight Situation.

Nearly all of the Cleveland ore dealers have sold a little ore for next season's delivery but the sales are not extensive enough to cause any demand for vessels and the situation grows more discouraging. There is no demand for vessels even at $1 a ton from Ashland, the figure at which 50,000 tons of ore was taken a short time ago. Nothing is said of an Escanaba rate, as there have been no sales to warrant contracts, but it is more than probable that any ore coming from Marquette will be compelled to pay rates equal to the figures ruling from the head of Lake Superior this season, as all ore tonnage must depend on up loads to make the income meet expeses and there will be little coal going to Marquette. Capt. James Millen, of Detroit, Capt. James Davidson, of West Bay City, Capt. McDougall, of Duluth, Capt. David Vance, of Milwaukee, and other heavy owners of lake floating property have all been in Cleveland during the week looking over the ground but they found little to interest them and left with the determination that they could not take ore on the basis of $1 from Ashland should a demand come up that would warrant any kind of an offer. It can be said without any tendency toward sensational utterances that unless present surroundings show a marked change many boats will make a first trip and then be compelled to tie to the dock. This is, of course, looking to no improvement in the ore market and anticipating the proposed big strike of soft coal miners on May 1.

An active demand for vessels to load soft coal before May 1 is the only redeeming feature of the whole lake business. Every inch of cargo space is being eagerly soungt after by coal shippers at all lake Erie ports, and the coal fleet to move at the opening will probably be the largest in the history of the trade. Rates are 50 cents to the head of Lake Superior, 55 cents to Milwaukee and 50 cents to Green Bay. Shippers are only offering 55 cents to Chicago and 40 cents to Escanaba. There is coal to go to both of these places and it is probable that these rates will be forced higher, as vessel owners refuse to take such figures. There is no noticeable disposition to hurry boats out of port and it is certain now that little will be doing before the middle of May. The ore companies seem as earnest as individuals in holding their boats back and in some cases may send outside vessels for the few loads that are needed early.

The Grosse Isle Ranges.

As shown by a notice elsewhere Major Overman, light-house engineer of the Tenth district, has about completed the work of establishing range lights at the head of Grosse Isle, Detroit river. The lanterns will be lighted on the 20th inst. and will be of great assistance in navigating that part of the river between the head of Grosse Isle and the Lime Kilns. The towers have been up for some time past and it was said that the cross slats on them did not extend down far enough to make them good day beacons. Major Overman has accordingly ordered them slatted down farther and will have the front tower painted white, while the rear one will be red.

A New Ward Line.

Capt. Eber Ward, of Detroit, has had a great many years of experience in Lake Superior freight business and has evidently made up his mind not to be frozen out by the recent action of Detroit stockholders in the Ward line of boats. Since the reorganization of that company, Capt. Ward has been figuring with Mr. Bullard, of Buffalo, and other eastern parties, and it is understood that he will be at the head of a new Lake Superior line that will include the propellers Saginaw Valley, Toledo, Avon, Portage and Nyack. The details are probably not complete as yet, but such a scheme is under way, the plan being to take up a way-port business and also engage in the Portage copper trade. The Nyack, while running as a passenger boat, is expected to do a fair share of the freighting work.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland Iron Mining Company	$ 25 00	$ 15 00	$ 16 00
Champion Iron Company	25 00	90 00	100 00
Chandler Iron Company	25 00	39 00	40 00
Chicago and Minnesota Ore Company	100 00	.....	110 00
Iron Cliffs Iron Company	50 00	.....	120 00
Jackson Iron Company	25 00	90 00	100 00
Lake Superior Iron Company	25 00	65 00	68 00
Minnesota Iron Company	100 00	68 00	70 00
Pittsburg Lake Angeline Iron Co	25 00	145 00	.....
Republic Iron Company	25 00	26 50	28 50
Michigamme	25 00	8 50	10 00

A late discovery on the Masaba range has caused considerable favorable comment. After an 8-foot shaft had been sunk 70 feet on the property of the Diamond Mining Company, near La Prairie, there was struck what appears to be the main lead of the very best quality of soft hematite ore. At last reports 6 feet of the ore had been gone through and it improved as the depth increased. The Stone company, which has been carrying on explorations on the S. W, ¼ of section 18, 59-14, has uncovered a body of ore 40x60 feet. The deposit has been traced for a distance of 900 feet. The ore, which is a red specular magnetic, runs from 58 per cent. to 64 per cent. iron, with from .017 per cent. to .02 per cent. in phosphorous, low in silica and said to be free from titanium.

The St. Clair brothers are offering for sale 2,000 shares of the treasury stock of the Riverside Iron Company. This move is said to be for assisting the work of development. The deposit now has a length of about 115 feet.

The east end exploration of the Lake Angeline is still promising although nothing of great value has as yet been found. Good blue ore was struck at the bottom of the shaft last week and there is hope of a large deposit.

The Griffin—Clveleand Company's No. 12.

The last steamer of the Lake Superior Iron Company's fleet was to be launched at the yard of the Cleveland Ship Building Company, Thursday. Her name is the Griffiin and she is the counterpart of the Wawatam, 266 feet keel, 38 feet beam and 24 feet deep. She has triple expansion engines and an independent condenser. This fleet of four steamers, La Salle, Joliet, Wawatam and Griffin, will be as successful business boats as can be found on the lakes. The first two, in commission last season, proved themselves to be happy means between flyers and big carriers.

Death of Capt. W. W. Starkey.

Capt. W. W. Starkey, who died at Ashtabula Harbor last week, was fifty-seven years of age and was among the best known men on the lakes. He sailed from boyhood and was master and owner of several good vessels among the last of which was the schooner James C. King, one of the best sail vessels of her day. He left the King about ten years ago and began a ship supply business in which he was very prosperous up to the time of his death. Capt. Starkey was the owner of considerable real estate at Ashtabula Harbor and was a prominent Mason and a leader in two or three other orders. The funeral on Sunday was very largely attended by the different societies and the burial was under the direction of the Masonic order. Capt. James Davidson, who was a brother-in-law of the deceased, came from West Bay City with Mrs. Davidson to attend the funeral. Capt. Starkey leaves a large family, his sons being capable of looking after his affairs.

The Herreshoffs are building a 23 mile yacht for E. D. Morgan, New York. She is 95 feet long, 10 feet beam and draws 5½ feet. She will be fitted with a Thornycroft boiler, allowed 250 pounds and her triple engines will be 9, 14 and 22½ by 12 inches stroke. She will resemble the Say When, owned by W. J. White, and the Now Then, but she will have nothing above deck except the stack and the pilot house.

The Big Detroit Steel Boat—Steamship E. C. Pope.

Special Correspondence to the MARINE REVIEW.

DETROIT, MICH., April 16.—The Dry Dock Navigation Company is the name of the corporation now in charge of the big steel boat on the stocks at the Wyandotte yard of the Detroit Dry Dock Company. The boat will be ready for service about May 1 and will be managed by Capt. James Millen, of Parker & Millen. She will enter the general freighting business, carrying ore, coal and grain. Preparations were made for launching her on Saturday next, but it is not probable now that she will be launched until about May 1, as everything will be gotten aboard to make the boat almost ready for service when she enters the water. She will be named for E. C. Pope, the Cleveland iron ore merchant. She will undoubtedly carry 75 to 100 tons more on the same draft than the big Maryland, built on the same model. This gain comes mainly from a shorter shaft, the engines in this boat being located farther aft. The new boat will be sailed by Capt. George Miner, and Engineer Snyder, formerly in the Iron King, will have charge of her machinery. Mr. E. C. Pope, for whom the boat is named has charge of the sale of ore of the Metropolitan Iron and Land Company, controlling the big Norrie mine. The boat is 337 feet over all, 42 feet beam and 24 feet hold.

The recent accident to the City of Detroit, together with the changes that followed in officers of the line, has caused a great deal of comment—some of it of an unfavorable nature—but it can hardly be expected that a big steamboat line of this kind can be run for all time without a mishap of some kind, or that a steamboat officer is a poor navigator because he is unfortunate. The management of the big boats certainly has every confidence in the ability of Capt. D. A. McLachlan, although circumstances required a change. This was really his first accident. He could not well be blamed for eating his supper in the widest part of the Detroit river last summer when the City of Detroit-Kasota collision occured, and vessel masters who are acquainted with the channel from the head of Groose Isle to the Lime-Kilns can realize the difficulty of bringing a boat down that part of the river without the aid of the range lights that have always assisted them. By the change Capt D. A. McLachlan goes into the old steamer City of Detroit, which will run in the excursion trade between Cleveland and Put-in-Bay, and Capt. Alex. J. McKay, for many years captain of the City of Alpena, of the Lake Huron division, has been given command of the new City of Detroit. His place on the Alpena will be taken by Capt. Matt. Lightbody, of the City of Mackinac. Capt. Slyfield, who has for two years been pilot and first mate on the Mackinac, will command her this season. General Manager Carter says the damages to the City of Detroit will amount to at least $30,000, besides six weeks loss of time, or a total loss of about $50,000. She struck the Dougall Rock squarely head on, crushing her bows up to the five foot mark and back for 20 feet into a shapeless mass of steel plates, frames, stem-piece and keelson. On the starboard side for nearly 100 feet back the garboard strake is crushed, and the frames probably so badly as to require removal. On the port side the damage is far greater. The path of the rock on this side seems to have started near the keelson forward, and to have gradually approached the bilge, badly crushing plates and frames to nearly amidships.

Milwaukee Grain—Lake Michigan Notes.

Special Correspondence to the MARINE REVIEW.

MILWAUKEE, WIS., April 16.—Within a few days local shippers have taken two steamers for wheat cargoes to Buffalo at the going rate of 2 cents. They are the Veronica and P. J. Ralph, and their united capacity is about 105,000 bushels. These shipments will reduce the stock in store at this point to 240,000 bushels and leave very little to go forward in the near future, as the receipts are very light. Besides the steamers noted above the only other craft loaded with grain at this port thus far is the barge Allegheny, consort of the steamer Ralph. She has 40,000 bushels of rye on board.

Vessels of all descriptions, steam and sail, confined to the coarse freight trade, are now moving in every direction on Lake Michigan except to Green bay ports. At the upper end of the latter thoroughfare the ice was still firm up to to-day, although it is supposed to be broken up inside of Death's Door and accross to Cedar river. The Goodrich Line people do not expect to dispatch a steamer to Green Bay city before next week.

The recently organized Milwaukee and Eastern Transit Company, which is to form railway connections with Detroit on the east and Louisville on the south by way of Benton Harbor, has purchased the old steamer City of Fremont for the route, and is concluding negotiations for another boat of similar size, so as to constitute a daily line. The company has closed a ten year's contract with the railways interested on favorable terms. The price paid for the Fremont is said to have been about $20,000.

A. P. Read, of Kenosha, and T. H. Head, of Chicago, have purchased the old-style Welland canal schooner John Wesley of Oswego parties for $6,600—a good price when the existing freight outlook is considered.

A new boiler has been placed in Pauley's iron steamer Roanoke. It was built at Detroit, and is 9 feet in diameter and 14 feet long.

A telegram from East Tawas announces the total destruction of the schooner Souvenir through being crushed by shifting ice. The Souvenir was built at Milwaukee by Filkins in 1854, or thirty-seven years ago. Although fairly favored by fortune, she met with some serious mishaps in the course of her long career. On one occasion, when owned at Pentwater, Mich., she capsized off Little Point Sauble and drowned her entire crew. A fact worthy of note is that Capt. Elmer W.Craine, of the steamer William H. Wolf, was born on board the craft during a trip accross Lake Miahigan about twenty-three years ago. At that time Elmer's father, Capt. D. P. Craine, of the steamer Ferdinand-Schlesinger, was in command.

A Launch Every Day.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, MICH., April 16.—The steamship William F. Sauber was launched from Wheeler & Co.'s yard at eleven o'clock, Wednesday morning. Everything had been in readiness to launch Saturday, but the water in the river was too low to make the venture a safe one and the launch was postponed until Monday. At that time the wind still continued in the south and the water had not risen an inch. Monday night the wind changed to the north and brought the water up rapidly, and the vessel was slid in as soon as possible. The second launch of the City of Chicago occured, Wednesday. The vessel now presents a much handsomer appearance in her lines than before, and her builders and owners expect that she will come up fully to their expectations regarding running capacity and draught.

The barge Irish was the first to begin loading lumber at this port. She commenced Tuesday, at Green & Braman's mill and was loaded by members of the Longshoreman's union. It is evident that the "free on the rail" resolutions of the vessel owners' association a few weeks ago have already come to naught.

F. W. Wheeler is in Boston, and rumor has it that he is after another of those contracts for an ocean freighter, all of which have, so far, successfully eluded him. Everybody hopes he will succeed this time.

The Keweenaw, the last of the steel vessels being built at Wheeler & Co.'s yard, will be launched in halves and taken to the Montreal dry dock direct from here. Her mate, the Mackinaw, was launched complete here and then cut in two at the Buffalo dry dock. The builders think they will effect a considerable saving by the plan they propose to pursue. It is the first time anything of that sort has been undertaken by lake ship builders, and the result will be watched with interest. The ways have already been laid under the vessel preparatory to pulling her apart. The separate launches will take place about the last of the month, on succeeding days.

All of Capt. Davidson's "Big Four" are ready for launching but everything will be made ready on them before they go into the water. They will all be afloat about May 5, and by that time the schooner now well under way at the yard will be nearing completion. She is now ready for planking. Work is also progressing favorably on the Alpena company's tug.

The dimensions of the Sauber are 312 feet over all, 291 feet keel, 41 feet beam and 23 feet deep. Her engines were built by the Frontier Iron Works, Detroit, and her two boilers are from Wickes Bros., E. Saginaw.

Chicago Grain Stocks—Labor Troubles.

Special Correspondence to the MARINE REVIEW.

CHICAGO, ILL., April 16.—Less than 2,000,000 bushels of grain of all kinds will leave here with the opening of navigation. A few boats are being chartered for wheat at 2 cents to Buffalo with the corn rate at 1¾ cents and oats at 1⅜ cents. On Monday last there was 6,231,138 bushels of wheat in store here, against 4,125,446 bushels at the corresponding time a year ago, but stocks of corn amounted to only 264,631 bushels against 8,729,863 bushels a year ago. Oats of all kinds foot up 591,978 bushels against 1,379,626 bushels last year. In addition to this there is afloat in the harbor 1,088,407 bushels of wheat, 226,328 bushels of corn and 189,255 bushels of oats.

The Lake Michigan Vessel Owners' Association, made up mainly of the owners of lumber carriers, has taken a stand against the labor organization in determining to establish a shipping office here for the coming season. They are willing to base wages upon the lumber rate from Manistee and Menominee. If the lumber rate is $1.50 per 1000 feet it is proposed to make the rate of wages $1.50 a day, that rate to be a minimum figure which will be increased in proportion to the increase in freights. The union sailors who want $2 a day are not satisfied with this arrangement. The owners of the lumber boats will accordingly endeavor to secure the assistance of the Chicago Vessel Owners' Association in establishing a shipping office for the purpose of procuring men outside the union.

Official Numbers and Tonnage.

The following official numbers have been assigned lake vessels by the bureau of navigation, W. W. Bates, commissioner, during the week ending April 11: Sail—Hattie B., Detroit, tonnage, gross 8.98, net 8.54, No. 96,101. Steam—Lillie A., Port Huron, tonnage, gross 11.23, net 5.62, No. 141, 126; Towsend Davis, Buffalo, tonnage, gross 67.83, net 33.92, No. 145,580.

The Kingston Rebate—Reciprocity.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., April 16.—The new order issued by the government to the effect that a refunding of the canal tolls will be allowed on grain transhipped at Canadian ports shuts out Ogdensburg's chances of getting a portion of the St. Lawrence trade and will likely lead to trouble. The exchange of Montreal want the order changed, because it will interfere with their business in this way. They claim that if they are allowed to store grain at Ogdensburg they could handle the markets better than if they are compelled to sell immediately after buying, which they must do now, simply because there are no large elevators at this port. The new order does away with any hope of an elevator being built here in the near future. Again, the Americans may look at the new order as eing a discrimination against them and cause them to operate against Canadian bottoms and grain at the Sault Ste. Marie canal. But this is improbable, and if the government did not do what it has done Canada would lose the grain trade altogether. The Montreal corn exchange has petitioned the government in the matter, but thus far has received no reply.

Parliament will soon meet, but it is a question whether any decision will be given with regard to reciprocity in wrecking, the recent visit of Canadian ministers to Washington, having resulted in disappointment. The question will certainly be brought up in the house, but under the circumstances the prospects are that discussion will be put off until it be seen what will be the outcome of the negotiations for a greater measure of free trade between the two countries.

The steamer Van Allen was the first craft to leave this port. She took a load of lumber to Oswego. The schooner Queen of the Lakes, Capt. Joseph Parsons, was the first arrival. She brought coal from Charlotte. Capt. Ewart, of Coburg, has bought the schooner Lady Macdonald.

Capt. Theof. Allen, a well known shipbuilder, who lived here for many years, died after a lingering illness.

The Bon Voyage, to run between Rochester and the Thousand Islands, is finished. She has fifty staterooms and is one of the best equipped steamers that ever plied on Lake Ontario. The iron steamer Rosedale has been lengthened and her first cargo here is expected to be 75,000 bushels. Mariners say she is greatly improved in appearance.

Among vessels here which are getting overhauled and thoroughly repaired are the White Oak and S. H. Dunn. It will be remembered that about two years ago the steamer Quinte, owned by the Rathbun company, was burned and several people lost their lives. The captain lost his papers over the matter, which opened a channel for suits for damages. Suits were entered by relatives of deceased for sums aggregating $26,000. Evidence was taken carefully, and in every instance a verdict was given for the defendant. This result will likely lead to the captain being reinstated in a responsible position. He did the best possible under the circumstances to save life.

Owing to delay in construction of new boilers for the Corsican, one of the mail steamers, it will be late in season before she will be ready to run. The company will be greatly inconvenienced. Capt. S. Fraser has purchased the schooner Bavaria from the Calvin company. She will be towed by the Scotia in the timber trade.

An agitation has been begun at Prescott, a town about fifty miles down the river, to have elevators built there and thus take the grain trade from Kingston. That place claims to have the best facilities on the continent for transhipping grain. One thing certain, if elevators are built at all they will be erected here.

Duluth Grain and Lumber.

Special Correspondence to the MARINE REVIEW.

DULUTH, MINN, April 13.—There is now about 5,000,000 bushels of wheat in store here, and the grain is coming in much more freely than was expected. The supply of flour is also very large and the coal docks are practically empty.

Mr. John Gordon, general manager of the Northern Steamship Company, calls attention to the fact that Duluth will shortly be a heavy shipper of lumber. He is of the opinion that there will be shipped next year to Chicago and the east 60,000,000 to 80,000,000 feet of lumber from the head of Lake Superior. Such a trade will have a big bearing on other freights.

Masters and Engineers.

Howard Towing Association, Port Huron, Mich: Tugs—Alanson Sumner, Capt. Chris. Smith, Thomas Aberinthy, engineer; Howard, Capt. William Smith, C. S. Pelton, engineer; W. B. Castle, Capt. Ed. Allision, Peter Finney, engineer; Brady, Capt. Bowen, Frank Buzzard, engineer.

Northern Michigan Line, Charlevoix, Mich.: Steamers—City of Charlevoix, Capt. Ira Bishop, A. C. Bowen, engineer; Lawrence, Capt. William Finucan, Frank Bowen, engineer; Soo City, Capt. Byron Armstrong, Thomas J. Rees, engineer.

Hart Line, Green Bay: Steamers—Fanny C. Hart, Capt. H. W. Hart, Charles Moreland, engineer; Eugene C. Hart, Capt. C. B. Hart, Richard Crandall, engineer; C. W. Moore; Capt. Wm. Baptist, Jules Schram, engineer; Welcome, Capt. P. Roulette, Geo. Coulter, engineer.

Northwestern Transportation Company, Detroit, Mich.: Steamers—S. R. Kirby, Capt. James Fraser, J. H Hand, engineer; E. M. Peck, Capt. E. C. Gatfield, W. Watts, engineer; Fayette Brown, Capt. D. Girardin, Nick Anderson, engineer; Forest City, Capt James Sanders, engineer not yet appointed; R. J. Hackett, Capt. Henry Sanders, J. H. Foster, engineer. Schooners—Harvey H. Brown, Capt. E. M. Fuller; William McGregor, Capt. J. B. Hochrath.

Anchor Line, Erie, Pa.: Steamers—India, Capt. W. W. Smith; China, Capt. Charles Christy; Japan, Capt. R Smith; Winslow, Capt. C. Mason; C, Campbell, Capt, George Graser; Susquehanna, Capt. M. Riley; Clarion, Capt. J. Corcoran; Lehigh, Capt. H. A. Sisson; Philadelphia, Capt. A. E. Huff; Alaska, Capt. J. Doherty; Lycoming, Capt. J. McCarthy; Conemaugh, Capt. H. O. Miller; Delaware, Capt. P. O'Neil; Conestoga, Capt. P. H. Riley; Juniata, Capt. D. Ryder; Wissahickon, Capt. H. Durker. Tug Erie, Capt: E. L. Thompson.

St. Mary's River Patrol—The Sunken Wrecks.

Commander Heyerman, of the Eleventh light-house district, stationed at Detroit, has sent on to Washington a recommendation with regard to the patrol boat for the St. Mary's river. The boat will go up and down the entire river every day beginning with the opening of navigation, and there need be no complaint of stakes being out of place if vessel masters will hereafter notify the officers of the patrol boat or the men in charge at the canal of any marks that may be out of place.

Commander Heyerman is also looking after the Kasota wreck, below Detroit, and has arranged for a float light over the hull. A light could not well be maintained on the small portion of the boat's mast above water. It is expected that Falcon, the Chicago wrecker, will this week resume work on removing the ore from the Kasota. The schooners Ben Hur and Tremble, sunk near Port Huron will soon be out of the way. The Tremble is already partially blown up.

The St. Mary's River Light System.

Col. William Ludlow has begun work preparatory to establishing the system of range lights on the St. Mary's river, for which the last congress appropriated $30,000. Plans for the location of the lights, all but one or two of which will be shore structures, have been in readiness for some time past and the actual work of construction will begin shortly after the opening of navigation. It will, of course, require the greater part if not all of the season to complete this work but it will be pushed forward rapidly. This system will be of great service in navigating the St. Mary's river, especially for steamers going up. One objection that has been heard to it is that vessel masters will not allow each other space to pass, but will meet bows on, both attempting to hold the range. This apprehension may be taken out of account, however, as the good feeling brought about during the past year by the Excelsior Marine Benevolent Association, order of lake captains, will have a great deal to do with regulating such matters. The system will, of course, be used most for day service and the main cost is in the construction of the beacons but it will certainly be used to some extent for navigation of the river by night. Capt. George P. McKay has secured from Col. Ludlow charts showing the location of the different lights, and the system has the approval of all lake navigators who have examined the plans.

Notice to Mariners.

The light-house board notice of the new Grosse Isle ranges is as follows: Notice is hereby given that, on and after April 20, 1891, fixed white lens lantern lights, each illuminating 90° of the horizon, will be exhibited from the structures recently erected on the north end of Grosse Isle, to mark the range line for running the main channel of the Detroit river from the Lime-Kiln crossing to a point about 1¼ miles southerly of Mamajuda light, where Grassy island and Mamajuda lights are in range. The lights are 1,493 feet apart on a line ranging approximately S. by E. ½ E. (true). The structures are triangular skeleton pyramids, painted brown. The upper 25 feet of each is covered with white slats, and the lights are exhibited 14 feet below the top of the structures. The front light is 71 feet above mean low water and the rear light 103 feet above mean low water.

Figures Based on the Work of Jim Hill's Boats.

A meeting was held in Albany, N. Y., a short time ago for the purpose of presenting to a board of engineers from the corps of engineers of the army the necessity of deepening and widening the Hudson river. The different commercial bodies of the lakes were requested to send representatives to the meeting and S. A. Thompson, of Duluth, was among those who delivered addresses. Mr. Thompson makes some interesting comparisons on lake and rail carrying charges in his address, the most interesting portion of which follows:

"Some ten or twelve years ago two gentlemen, both of them railway presidents, one of an eastern, the other of a western road, sat talking together, and the conversation turned upon the continually increasing efficiency and decreasing cost of railway transportation. The eastern man stated that canal boats were about played out, and that river steamers were about ready to follow the canal boats into permanent retirement, and expressed the opinion that it was only a question of time when the steamships would also be driven from the great lakes, leaving to the railways an undisputed monopoly in the carrying trade of the continent.

It is exceedingly interesting to note the successive reductions which have been made in railway freight rates, for according to Poor's Manual, the average rate per ton per mile received by all the railways in the United States, which in 1882 was 1.236 cent, had fallen in 1889 to .976 cent, a reduction of 22 per cent. in eight years. Standing alone, these figures would seem to justify the prediction of the railway president, but he forgot that it was possible to increase the efficiency of steamships as well as of railways. I have here a table showing the average charges for carrying a bushel of wheat from Chicago to New York for each year from 1868 to 1885, and by each of the three possible methods, viz.: All rail, lake and rail, and lake, canal and Hudson river.

Calendar years.	Lake and Canal. *	Lake and Rail.	All Rail.
1868	25.3	29.0	42.6
1869	24.1	25 0	35.1
1870	17.5	22.0	33.3
1871	21.6	25.0	31.0
1872	26.6	28.0	33.5
1873	19.2	26.9	33.2
1874	14.2	16 9	28.7
1875	11.4	14.6	24.1
1876	9.7	11.8	16.5
1877	7.5	15.8	20.3
1878	10.1	11.4	17.7
1879	13.0	13.3	17.3
1880	13.2	15.7	19.7
1881	8.6	10.4	14.4
1882	8.7	10.9	14.6
1883	8.40	11.5	16.5
1884	6.59	9.9	13.2
1885	4.55	9.06	14.0

*Including Buffalo charges and tolls.

From this table it appears that the all rail rate has fallen in that time from 42.6 cents to 14 cents per bushel, while the all water rate has dropped from 25.3 cents to 4.55 cents per bushel. That is to say, freight rates by rail have been reduced in the period covered by the table, until the last price named is only one-third that first mentioned, but during the same time the all water rate has been reduced to less than one-fifth of the rate first named. And more than that, the water rate has always been below the rail rate by a percentage ranging from 25 to 67.5.

"From the careful records kept at the St. Mary's Falls canal, it appears that the average price per ton per mile received by the vessels engaged in the carrying trade of Lake Superior was in 1889 0 15 cent; the total amount moved was 7,516,022 tons, and it was carried an average distance of 790.4 miles. The average rate on all the railways in the United States in the same year was .976 cent, or more than six times as much. In other words, to move the same amount of freight the same distance by rail, would have cost in round numbers $50,000,000 more than it did cost to move it by water. Wheat has been carried from Chicago to Buffalo for 1 cent per bushel, or .04 cent per ton per mile, and thousands of tons of coal have been carried from Buffalo to Duluth at 25 cents per ton, or .025 cent per ton per mile.

"If we investigate the actual cost of freight movement by rail and by water, we shall find some figures which are almost startling. Careful experiments, conducted for a long period on the Grand Trunk railway, showed the actual cost of moving freight, exclusive of fixed charges to be .5 cent per ton per mile. The average cost on all the roads reporting to the interstate commerce commission for the fiscal year ending June 30, 1890, was nearly 20 per cent. greater, being .593 cent per ton per mile, while the lowest cost I have been able to find on record is in the case of the Lake Shore & Michigan Southern, which has been able in exceptionally favorable years to report a cost as low as .4 cent per ton per mile.

"The western railway president above mentioned, related some time ago the incident of his conversation with the president of the eastern railway and added: 'I might have continued to share his belief in the ultimate triumph of the railway over the steamship, if I had not had occasion to build and operate a line of steamships myself. These boats carry 2,700 tons of freight on the present depth of water at the Sault, and make the run from Duluth to Buffalo in three days and a half, and cost an average of $120 per day.' Calling the distance from Duluth to Buffalo 1,000 miles, and we find these figures are equivalent to .015 cent per ton per mile, only 1-26th the cost on the Lake Shore road. Or to express the same fact in terms which will be more readily understood by the average business man, it costs $26 on the most favorable situated railroad in the United States to do what is done on the Great Lakes for $1. These apparently disconnected figures are, in reality, very closely related, and I have set them in array as a support to my first conclusion, viz: That under existing conditions it is utterly impossible for railways to carry freight as cheaply as it can be carried by water."

Michigan Coal.

There are now three leading points in Michigan where coal is mined in quantities sufficient to make the industry a paying one. These are Jackson, Owosso, and Sebewaing, and of the three, Sebewaing promises to become the most important, although the largest establishment at present is that of the Standard Mining Company, located one mile from Jackson. The coal bed at this point varies from three to four feet in thickness, while the Sebewaing bed will average over four feet in thickness. The quality of the Sebewaing coal is said, too, to be much better than the product of the Jackson county mines. The coal field of Michigan is detached from that of any other state. Its area is embraced principally by the counties of Saginaw, Shiawassee, Clinton, Ionia, Montcalm, Gratiot, Isabella, and Midland. Large areas also of Huron, Tuscola, Genesee, Ingham, Eaton, and Bay counties are underlaid by the coal formation, making in all fourteen counties, in addition to small portions of Livingston and Jackson counties, and probably several counties to the north, which are also underlaid by the coal formation.—Colliery Engineer.

A Commerce Destroyer—New Ocean Liner.

The "commerce destroyer," No. 12, now building for the government at Cramp's yard, was discussed before the naval architects' institute in London. It was decided that this was the most important war vessel now under construction. She is considered to be absolutely without parallel among the war ships of the world. She combines a sufficient armament with complete protection against light guns, while at the same time she possesses a sea speed and a coal endurance hitherto unknown to ships of war. No merchant vessel that she meets, armed or unarmed, can escape from her. She was then criticised, the chief fault found being in her length The lecturer claimed that that would handicap her in a heavy sea if she was after steamships like the Teutonic or City of Paris.

The Havel, a screw steamer of 9,000 tons register and 14,000 horse power is the latest addition to the fleet of the Norddeutcher Lloyd. She was built by the Vulcan Company, at Stettin. The engines are triple-expansion, the high-pressure cylinder 38 inches in diameter, the intermediate pressure 75, and the low pressure 100, with 6 feet stroke. Steam is supplied from ten boilers, of which six are double-ended. Each boiler is 15½ feet in diameter; the length of the double-ended 18 feet 8 inches, and of the single-ended 10 feet 4 inches. The propeller has four blades of manganese bronze, the diameter of the screw being 21 feet 7 inches and its pitch 31 feet 4 inches. The Havel is rigged with three pole masts of steel, without yards. She is 485 feet long, 52 feet beam, and 38 feet deep, moulded.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,425. Number of boats through Suez canal during 1889, full year, 3,425; tonnage, net registered, 6,783,187.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

Entered at Cleveland Post Office as Second-class Mail Matter.

EVEN the announcement that a train running fifteen miles an hour has gone through the St. Clair tunnel does not quiet the Michigan Central Railway officials who are preparing to make another move for a high bridge at Detroit. The plan now is for a bridge with two piers in the river and three spans of 700 feet each. The projectors of the bridge are said to have had a man stationed in one of the elevators on the Detroit river from July 1 to Sept. 1 of last year with all the necessary instruments for observing the position and height of all passing vessels. Over 7,000 day passages were noted during this time, tows counting as single vessels. This in itself should be enough to demonstrate the danger of a bridge of any kind, but the lookout in the elevator was there for a purpose other than that of showing the wonderful commerce of this channel. He claims to have learned that out of the total number of vessels only 1 55-100 per cent. had masts reaching above 135 feet, and that the routes chosen by passing craft are nearly the same, the upward bound keeping rather nearer to the Canadian side and the downward bound favoring the middle of the stream. Eighty-four per cent. of all the vessels passing up or down, this lookout reports, kept on a strip of the river only 700 feet wide. This may all be true enough but it has been gone over in the main in investigations before army engineers in the past and will avail the railway managers nothing if the vessel owners give attention to their interests early in the next congress. They have the several reports of eminent army engineers io support them, but it will be necessary to watch the senate. Senator McMillan, of Michigan, favors a high bridge.

As a final protest against giving the Northern Pacific railway a block of river front, the Chicago Tribune presents two columns of sound reasoning against it. The following points out the detriment to lake interests: "The river between the points indicated in the ordinance is now from 140 to 160 feet wide. It is proposed by the ordinance to straighten it so as to narrow it to 100 feet. This would seriously obstruct navigation. Most of the modern lake vessels are about 40 feet wide. No two such vessels could pass each other in safety, especially if smaller craft should be moored on either side. To carry out the project, therefore, would be to ruin the river for marine purposes. Capt. Marshall, in a recent report ro the secretary of war, says: 'The river can not accommodate any reasonable increase in the number of vessels using it, and yet it is proposed by this ordinance to narrow it.'" Alderman Dunham has fought this scheme at every move, and when the matter was referred to a committee he openly accused the mayor of jobbery. Mr. Dunham's work is about all that has stood in the way of filling up Chicago river altogether.

REFERENCE has been made to the coming change in the weather service of the government and especially to a feature in the law passed by the last congress providing for only twenty stations in the country where local forecasts shall be given out. It has been urged that the important lake cities, such as Buffalo, Cleveland, Detroit, Escanaba, Duluth and Chicago be given officers who will be entitled to give out these local forecasts. In answer to a request in this line from leading vessel and shipping interests in Cleveland, A. W. Greely, chief signal officer, says: "Acknowledging the receipt of your communication, urging that Cleveland be selected as a station at which one of the forecast officials provided for the weather bureau be stationed, I have the honor to say that as the president has not yet made known his intentions as to who is to be the chief of the weather bureau after July 1, 1891, the chief signal officer is unable to make any definite statement as to what the policy will be in these matters. Your recommendation will, however, be filed, to be brought up at the proper time." Lake interests at other ports should bear this matter in mind and demand recognition in the new service.

COMMENTING on the action of the traffic associations in making rates subject to the approval of the lake and rail lines, the New York Evening Post says that the cities of Superior and Duluth have wrested the grain and flour trade from Chicago so that last year the two ports shipped twice the amount of wheat that Chicago did. With an elevator capacity of 21,000,000 bushels, the opinion is expressed, that these Lake Superior cities have facilities for taking care of still more western grain. Stephen Douglas' prophecy that Puget sound would be the Pacifice seaport and that freight from China and Japan would go to New York via lake and rail lines, is quoted and buttressed by the fullfiilment of the future greatness he then pictured for Superior. Figures prepared by the MARINE REVIEW are quoted to compare this inland commerce with that of foreign counties.

DETROIT vessel owners like their brethren in other lake cities are forming stock companies and establishing headquarters at small places outside the city in order to reduce their taxes. A movement of this kind is often carried to the extreme, and it will be surprising if the municipal authorities do not in some case find a means of worrying the owner more than at present.

THE Canadian minister of canals will ask parliament to increase the appropriation for the canal lock at the Sault in order that it may be made 20 feet deep and 100 feet wide. The original appropriation was for a 16-foot lock but the minister has been considering the size of vessels now being constructed and proposes to be prepared for the results of the tendency to build larger boats. This lock and the one under construction for the United States government should possess facilities for a commerce four times as large as that now passing through this waterway.

Cleveland Matters.

George Quayle, of Thomas Quayle's Sons, has accepted the position of superintendent of the Ship Owners' dry dock.

Captain Joe Tod succeeded in raising the Tempest, from where she sank after being brought into the river. He was assisted by Metcalf, the diver.

From a hull built by Bell, of Buffalo, some time ago, the Cleveland Ship Building Company will soon complete a steam yacht for Isaac Bearinger, a Saginaw lumber dealer. The hull is 84 feet long, 8 feet deep and 14 feet beam. The boat will be built for pleasure and not speed.

Chief Engineer Elliott, of the Goodrich Transportation Company, is in the city looking after matters connected with the building of the two big passener boats for that line. The Atlanta, the wooden boat, will in probability be launched Saturday, April 25. Capt. Rossman will command the Atlanta and G. P. Roth will be chief engineer. The steamer Virginia will be commanded by Capt. Sweeney with Robert Walker as chief engineer.

Work of the Ship Yards.

The propeller Monohansett and consort Massassoit have both received general repairs at Toledo.

David Bell has completed the steel tug Keystone at Buffalo and she is ready for launching. Her dimensions are 90 feet long, 19 feet beam and 11 feet hold She has fore and aft compound engines 18 and 34 by 26 inch stroke.

The steamer building at Jenks & Co.'s yard, Port Huron, is well advanced and will be completed about May 15. Her dimensions are 127 feet keel, 138 feet over all, 30 feet beam, 9½ feet hold. She will have a steeple compound engine 14 and 28 by 24, and marine boiler 12 feet long and 7 feet diameter.

The new passenger steamer City of Toledo, built for service between Toledo, Put-in Bay and Detroit, will be ready to begin work about June 1. This is the boat built by the Craig Ship Building Company, of Toledo, and for which the Cleveland Ship Building Company constructed horizontal triple expansion engines. It is expected that she will be a fast boat. Her machinery has been placed in position at Toledo and the workmen are now busy on the superstructure.

The Phoenix Iron Works at Port Huron is building a steeple compound engine 16 and 32 by 36, and a marine boiler 8 by 12 to be allowed 125 pounds pressure, for a steamer building at South Haven by Capt. J. C. Pereue, also a steeple compound engine 14 and 28 by 24, and boiler 7 by 12, to be allowed 125 pounds pressure, for a steamer building by the Jenks Ship Building Company, Port Huron. They are also compounding the high pressure engines of the Duncan City and steamer Nelson Mills.

Capt. P. F. Thrall's new steamer at Fort Howard will be launched early in May, and ready for business about the 1st of June. Her length over all is 160 feet, beam 35 feet, and depth 20 feet 4 inches. Her engine and boiler are being built at Port Huron. The former is a steeple compound, with cylinders 16 and 32 inches in diameter and 36 inches stroke; the latter 7½ feet in diameter and 14 feet long. She will have two spars, and is expected to carry 500,000 feet of lumber. Her cost complete is estimated at $32,000.

Excelsior Marine Benevolent Association.

At the last meeting of the Chicago lodge Edward Stine, of the Puritan, and J. I. St. Clair, superintendent of the Dunham Tug Line were initiated.

Cleveland leads all lake cities in the amount of tonnage owned and now she has another honor, that of having the largest association of lake captains. The E. M. B. A. lodge here, now numbers 160, three more than Buffalo logde. Members have been working to this end for some time.

The Detroit branch promises to be one of the most successful in the order, as it is hoped that almost 100 members will be enrolled before meetings are abandoned for the summer. The lodge has not secured permanent quarters as yet but its treasury funds have been enlarged by liberal subscriptions from Detroit owners and rooms will be fitted out for the first meetings next fall.

Important Decision in a Lake Admiralty Case.

A statement made in an address at a recent meeting of the Cleveland organization of lake captains was to the effect that a vessel is not bound by an agreement on the part of the captain to give extra wages to a crew in a case where stress of weather or an accident of any kind demands extra labor. This is proven by a decision rendered a few days ago by Judge Jenkins in the United States district court at Milwaukee. It was in the case of John McKenna and others against the schooner Shawnee. The libelants shipped at Detroit, Nov. 13, 1890, on the schooner Shawnee, on a voyage to Huron for a cargo, thence to Milwaukee, and they were to receive $2.50 per day and fare home. The schooner sailed in tow of the steamer Spinner, with the schooner Godfrey in tow behind the Shawnee, and arrived at Mackinac on Nov. 22. On account of high wind the tow came to anchor, and the Shawnee took in her tow line from the Spinner. The Godfrey held on to the Shawnee, but the strain on the line was so heavy that it carried away the Shawnee's windlass, and the Godfrey had to anchor. The next morning the captain of the Shawnee went ashore, notified the owners of the accident, and received orders to proceed. When he returned to the boat, the men refused to turn to. The vessel was not fit to go on, they said. They would not risk their lives for $2.50 a day, and they would not proceed unless the captain agreed to pay them $50 each extra. If he would not pay them that amount they wanted the boat put into Cheboygan, sixteen miles distant. The captain had to accede to their demands, and the tow proceeded, arriving at Milwaukee on the 25th. The libellants were offered the wages agreed upon but were refused the $50 each and two of the sailors commenced suit. The owners paid the amount of wages into court with the amount of fare to Detroit.

The court said that while seamen were absolved from obligations if a vessel proved unseaworthy at the commencement of a voyage, they could not enter upon a new contract after undertaking service, except in extreme cases. The condition of unseaworthiness, the court held, did not exist, but that the men took advantage of the circumstances and the lateness of the season to coerce the master into an agreement. The judge commented on the case as follows: "To sanction such a demand would be a subversive of all discipline aboard ship and allow the crew to sit in judgment on commands of the officer. The duty of the sailor is implicit obedience to every lawful command. It is to the honor of the American seaman that no case like this can be found. The extorted agreement is illegal and can not be enforced. I cannot rest this decision here. Here was high and aggravated insubordination, a conspiracy for extortion and mutinous conduct. Such conduct entails the forfeiture of wages, and I can find no reason for mitigating the forfeiture. Such forfeiture, however inadequate as punishment for one of the highest offense known to maritime law, will be declared here as fitting warning to others who may be disposed to like insubordination."

The libel was dismissed with costs and the amount deposited by claimants in the registry of the court refunded to them.

To Compete With Ocean Greyhounds.

Capt. Alex. McDougall was in Cleveland during the week. He is of the opinion that he can outstrip the ocean greyhounds with a whale-shaped passenger boat, but all thought of her construction is a matter of the future, and the work, if begun at all, will not go on until it has been thoroughly considered by the New York officers of the company. He proposes to build a boat after the barge model, 450 feet long and 50 feet beam, giving her triple propellers with separate engines for each. The plans call for cabins full length capable of accommodating a very large number of passengers. McDougall thinks the boat could be made to run twenty-four or twenty-five miles an hour.

The Engineers and Owners.

The marine engineers are still holding out against the reduction in wages proposed by the Cleveland Vessel Owners' Association, and there is little change in the situation. Snch big lines as the Wilson, Menominee and Mutual have manned their boats with chief engineers, some of whom have been brought from other places, but the engineers are still earnestly at work with men who come from other places, and claim to be losing no ground. On the other hand, the owners seem to be making no special effort, and claim there is no need of it. President Galwey is in Cleveland, and the engineers have established new headquarters at No. 92 Superior street.

Around the Lakes.

Range lights are to be placed in the harbor at Kingston.

Daniel Harkins will be chief engineer of the George W. Roby.

Capt. J. McArthur, in the Aurora last year, will command the Colgate Hoyt.

The new boiler for the river steamer Mary stood a cold water test of 220 pounds at Port Huron.

Repairs to the revenue cutter Johnson have been completed and she will go into commission May 15.

St. Clair river is full of blocked ice from Fisher's dock to Dunford & Alverson's new dock, Port Huron.

Capt. Henry Wallace was seriously injured by falling down the hatch of the schooner David Wallace at Lorain.

The display of wind signals at all signal service stations on the lake was commenced April 15, by an order from Washington.

The American Eagle was pulled out at Sandusky for a rebuild. The City of Sandusky has commenced regular trips to the islands.

The Wolverine Dry Dock Company launched the hull for a dredge at Port Huron this week. It was built for Mitchell Brothers.

Chicago tugs have commenced towing at 50 per cent. reduction from card rates. An effort is being made to agree on living rates.

The headquarters of the Cleveland Vessel Owners' Association at Toledo is 146 Water street. Capt. John O'Conner is shipping master.

The Salina has been bought by Capt. William Tomlin, J. C. Miller and Hubert Manion. Capt. Tomlin will be master and Manion engineer.

Capt. Frank Hackett, of Amherstburg, is about ready to begin work on blowing up the schooner Charger, sunk in Point au Pelee passage, Lake Erie.

Capt. Dunn, last season in one of the boats of the Northern Steamship Company, will command the propeller Newburgh of the Lackawanna line this season.

Capt. Abraham Anderson died at Frankfort, Mich., where he was fitting out the schooner Weaver. He was 67 years old. The remains were taken to Racine for burial.

The steamer Antelope will make railroad connections for the Grand Trunk and the R. W. & O. Railways between Clayton and Ganonoque. She made her first trip this week.

Capt. Mott, in charge of the St. Clair canal, requests vessels to reduce their speed when near the cut at the lower end of the canal, so as not to disturb the dredges at work at that point.

The Lake Superior Transit Company has sold the propeller City of Fremont to the Milwaukee & East Shore Transit Company on private terms. The purchasers are already in possession of her.

The Landgraf case at Milwaukee has been continued until the next term of court. The jury disagreed on the first trial, and it is doubtful if the captain will be convicted when the case does come up.

The Anchor Line, though offering its canal fleet for sale, will still have a canal and lake steamboat company, though the boats will be owned by other parties. The old line will not be fitted out.

The Grain Shoveler's Union, of Buffalo, has adopted the old scale of shoveling charges for the coming season—$4.50 per 1,000 bushels for steamers; $4 for sail vessesl, and $1.25 for trimming canal boats.

Capt. S. Frazer has purchased the schooner Bavaria from Calvin & Son, Kingston. She will be part of the steamer Scotia's tow. Capt. Edmunds bought the schooner L. D. Bullock from Capt. Eccles for $4,000.

Lewis Francis is building a handsome steam yacht 51 feet long at Kingston. She will run between Channel Grove and the Thousand islands. At Clayton, Capt. Vernon Sweet is building a 75 foot yacht for St. Lawrence river business.

Capt. James Easson, in the J. I. Case for a number of years, has been appointed chief of police of Racine.

The Lackawanna company has chartered the new F. & P. M No. 5 for the season between Buffalo and Chicago. Owing to low water at Manistee and Ludington it is claimed that she cannot be profitably employed on Lake Michigan with the other F. & P. M. steamers.

T. J. Elderkin, agent of the Lake Seamen's Benevolent Association, Chicago, addressed a meeting at Kimberley's hall, Cleveland. He said there would be a branch in every port on the lakes before the opening of navigation. They will ask $1.50 for vessels at lower lake ports and $2 per day at the ports above Detroit.

Hughes Bros. & Bangs, of Syracuse, N. Y., who secured the contract for the Sault lock masonry work—the largest ever let in the United States—have contracted with the Milwaukee Cement Company for 100,000 barrels of cement to be used in the work. This is about one-fifth of the Milwaukee company's annual capacity.

The total amount of ship timber cut last season for James Davidson, West Bay City, was 160,000 cubic feet of oak, an increase over the last two seasons of more than 25,000 cubic feet. Besides this, 100,000 cubic feet was left over from last year, and 30,000 of it was put in this winter, leaving 70,000 to be put in next summer and fall.

Transfers of vessel property recorded at Milwaukee: Scow South Side, Anton and John Jongeblœd, of Milwaukee, to Peter Knudsen, A. F. Valentine and J. A. Smith, of Ephraim, Wis., the whole, $1,725; Schooner H. M. Scove, Edward and Bernhard Uhrig to Samuel Thorson, of Milwaukee, one-sixth, $1,200; Scow Laurina, Christoper C. Naleid and Erick Erickson to William H. Pugh, of Racine, the whole, $1,000; Schooner J. B. Newland, Jane M. Fellows to Christopher C. Naleid and Erick Erickson, of Racine, one-half, $2,000.

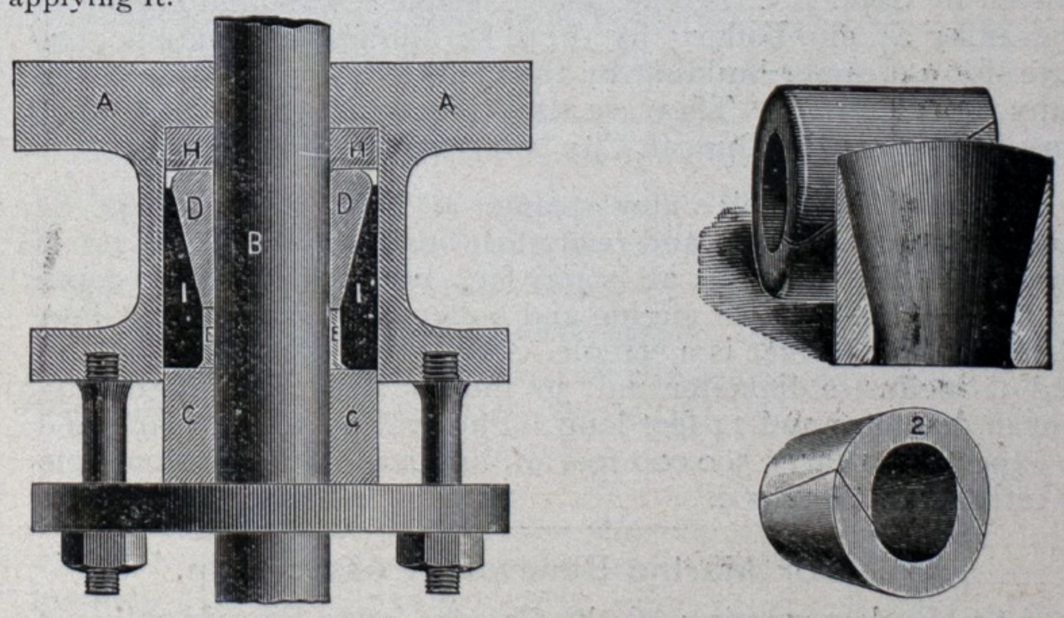
The Detroit Metallic Packing.

Attention is called to the advertisement of the Detroit Lubricator Company who manufacture a metal packing, simple in its construction and easily applied, without the necessity of disconnecting the rods. It has been in use four years and gives excellent satisfaction. It is placed on the market at a price below other standard manufactures. We give by permission the following testimonial:

"We have used Killmer's patent metallic packing on several of our large marine engines during the past few years and it has given us entire satisfaction. It is simple, easy to adjust and can be applied without disconnecting the rod. It affords us pleasure to testify as above."

SAMUEL F. HODGE & CO.

The accompanying cuts fully illustrate the parts and the manner of applying it.



A pinnace 48 feet long and 9 feet beam, with electric propelling power was launched at Kew Bridge, England, recently. The motor, which works a screw 22 inches in diameter, is covered by a small deck in the stern and the accumulators or storage batteries are under the seats, so that space is available for eighty passengers. The machinery weighs 2½ tons, the displacement is 4¾ tons and she makes eight knots an hour. The cost was $3,000, and the running expenses 18 cents a knot.

Stocks of grain east of the Rocky mountains last week showed big decreases at nearly all points excepting Chicago and Duluth where the increase was noticable. Stocks are as follows: Wheat 39,750,626 bushels; corn 4,971,702 bushels; oats 4,402,707 bushels.

Affairs in Admiralty.

BIG SALVAGE CASE.

Judge Wallace, of the circuit court, district of Connecticut, recently sustained a district court decision for heavy salvage. An iron steamship, the City of Worcester, valued at $235,000, struck upon a reef, and lay in an exposed situation, liable to grind on the boulders and increase her injuries. T. A. Scott, an Atlantic coast wrecker, was employed by the owners of the steamship to save her, and was instructed by them to employ assistance. The salvors conducted operations with energy and pulled the vessel off the reef and into port for repairs a week after she struck. Her repairs cost $35,000. The wrecker's equipment engaged in the service was worth about $25,000, and the equipment hired by him was worth about $80,000. One of the wrecker's vessels struck on the reef and had to be repaired. The bill of the employes of the wrecker at schedule rates was $13,525.50. At the same rates, the wrecker's bill for his equipment, exclusive of his personal service, which consisted of supervision of the whole work, would be about $8,600. The court held that an award of $31,733.32 would not be reduced on appeal.

The libel proceedings instituted at Detroit against the steamer Progress, for having caused the sinking of the steamer Fred. McBrier at the Straits last season, have been discontinued. The underwriters interested in the McBrier also held the insurance on the Progress, and therefore, as no particular advantage could accrue to them from a suit to recover, a settlement satisfactory to the owners of the McBrier was arranged and the suit withdrawn from court. The Progress ran into and sunk the McBrier during the prevalence of an unusually dense fog, which led to several other collisions, more or less serious in their consequences, in the same waters.

In circuit court, eastern district, Louisiana, a decision was given that has a bearing on arbitration. It was agreed between the owners and charterers that any question arising between them should be referred to the arbitration committee of the New Orleans Maritime Association, or at the master's option to two arbitrators. A question did arise, but the captain refused to name an arbitrator or present a case to the association. Notice was given and the committee made an award. It was held that on the master's refusal to elect as to arbitrators no arbitration could be had, the only remedy for the charterers being a suit for damages for breach of agreement to submit.

The Sheffield-North Star collision case, of lake fame, is standing on appeal and will come up in the higher court about July next.

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Owner of the Largest Tug Line on the Great Lakes.

16 Steam Pumps, Divers, Hawsers, Lighters, Etc.

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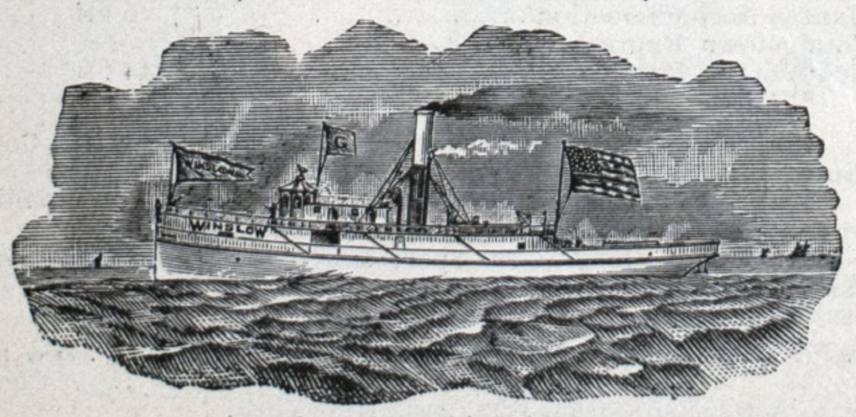

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The MARINE REVIEW and the MARINE ENGINEER, London, one year for $4. Write the MARINE REVIEW.

TO SHIP-BUILDERS: OFFICE OF THE Light-House Board, Washington, D.C., April 7, 1891.—Proposals will be received at this office until 2 o'clock p.m. of Tuesday, the 5th day of May, 1891, for furnishing the materials and labor of all kinds necessary to construct the Light-House Tender Amaranth, for service on the Northwestern Lakes. Plans, specifications, forms of proposal, and other information may be obtained on application to this office. The right is reserved to reject any or all bids, and to waive any defects. D. B. HARMONY, Rear-Admiral, U. S. Navy, Chairman. Apr. 16

PROPOSALS FOR DREDGING. U. S. Engineer Office, Grand Rapids, Mich., March 28, 1891. Sealed proposals, in triplicate, will be received at this office until noon of April 28, 1891, for dredging in Manistee River and Harbor, Mich. The quantity of material to be removed is between 50,000 and 60,000 cubic yards. Attention is invited to Acts of Congress approved February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, Statutes at Large. The government reserves the right o reject any or all proposals. For information, specifications, etc., address as above. WILLIAM LUDLOW, Major, Corps of Engineers, Bvt. Lieut. Col. U. S. A. Apr. 23

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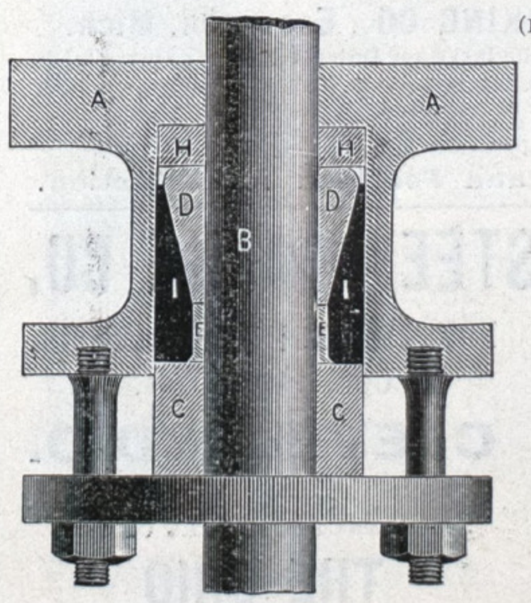

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Can be applied **without disconnecting** the rod, prevents blowing or leaking of steam, cutting of rods or the blistering or rusting of rods when engine is not in use.

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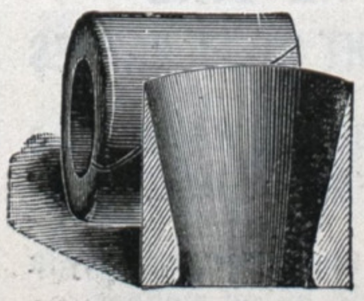

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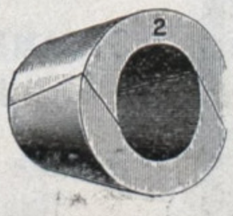
If your rods are in perfect line, send us exact dimemsions for trial set.



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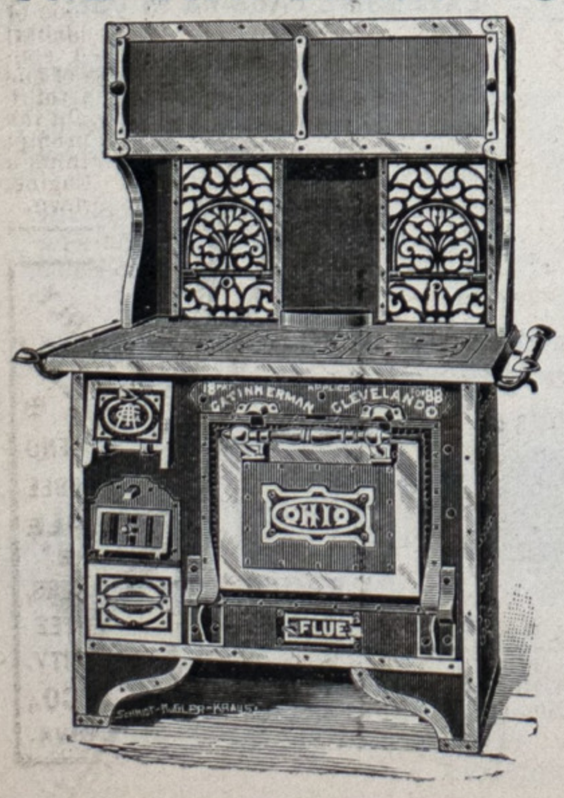

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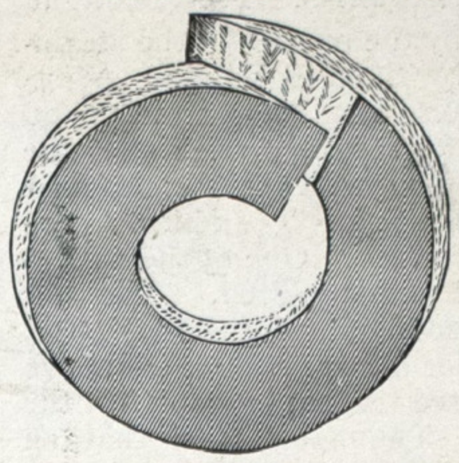

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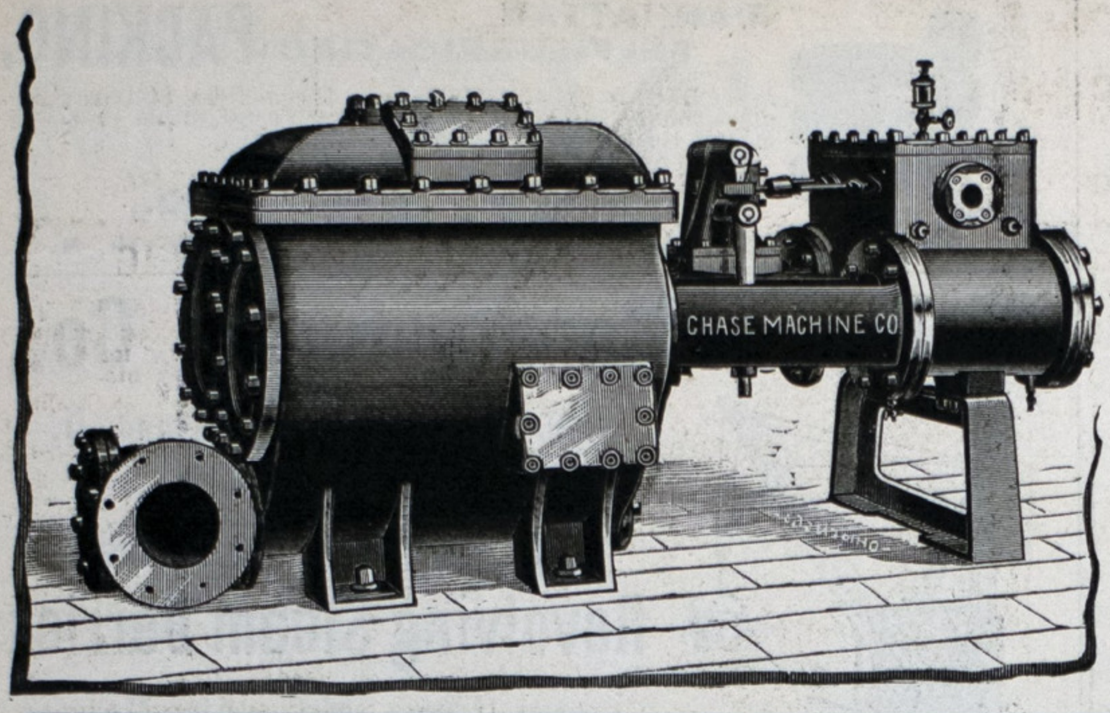

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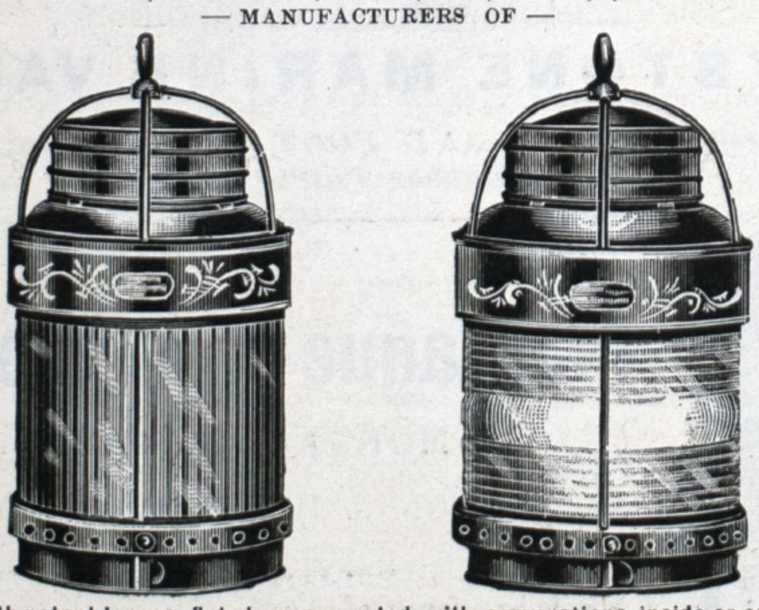

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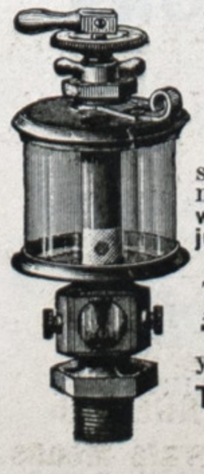

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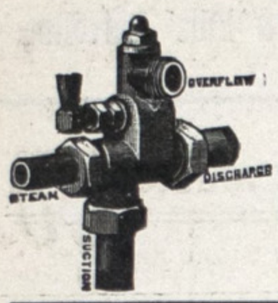

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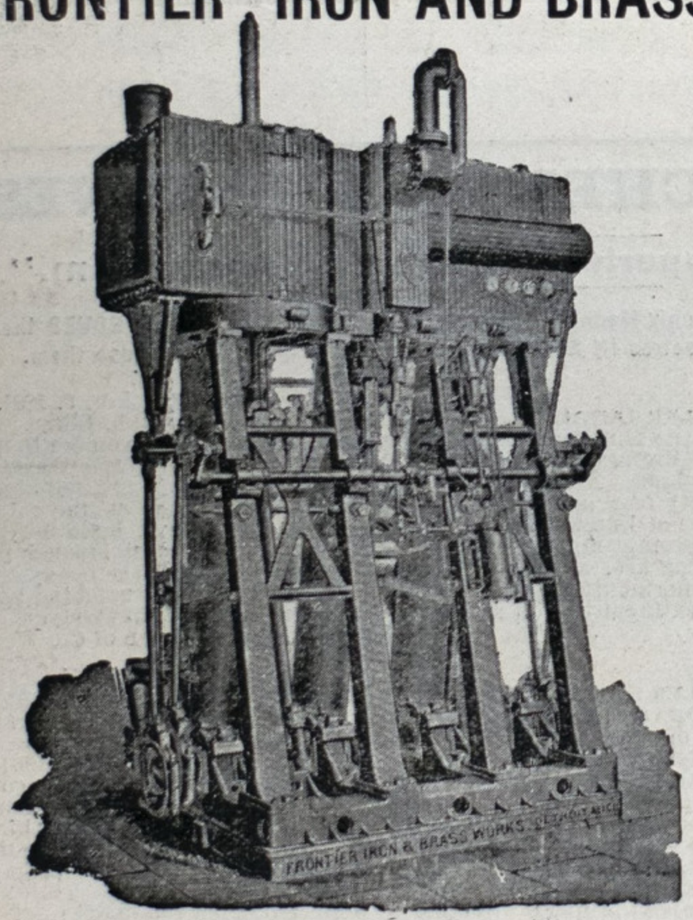

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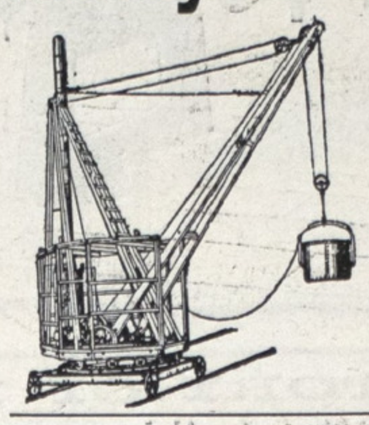

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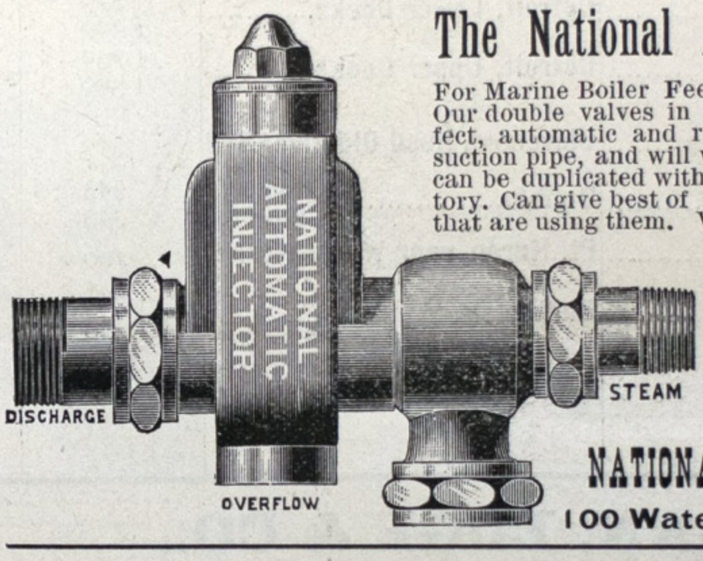

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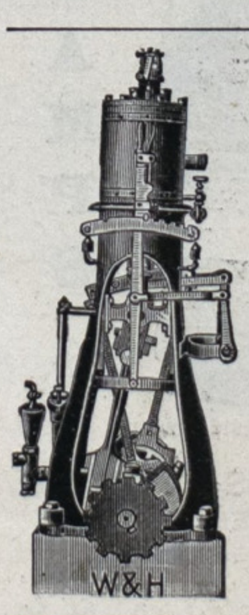

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